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PSYCHIATRY IN A CHILDREN'S HOSPITAL

WHILE individuals have shown a *special* interest in the behavioural disorders of childhood for many years, it is only within the last 30 to 40 years that this interest has developed into a recognized specialty or subspecialty of psychiatry.

Originally the physician counselled the parents himself and carried out therapy with the child. Then came the child guidance clinic with its clinical team, the psychiatrist, the social worker and the psychologist. Such child guidance clinics tended to be community-oriented, relating more closely to the social agencies than to medicine. The development of psychiatric facilities in children's hospitals, while present in a few hospitals for many years, has been in general a recent development. At the present time such services are present in almost all the major pediatric hospitals in Canada, and almost every Canadian medical school has a child psychiatrist attached to its department of pediatrics.

The psychiatric services in a children's hospital usually include a clinic which provides treatment facilities to children in the community and to patients on the general ward of the hospital. In many hospitals the clinic does not duplicate the community clinics and develops special areas of interest. These areas are usually concerned with the emotional problems of the infant and the pre-school child, and with the emotional aspects of organic disease. Because these clinics serve infants and pre-school children they tend to have an earlier contact with behavioural disorders than do most community clinics.

In certain hospitals inpatient units have been developed to provide for the observation and short-term treatment of behavioural disorders. The patients treated by such a unit usually include a large number of children whose behavioural disorders are secondary to organic disease, either of the central nervous system or general somatic systems. Through the diagnosis and treatment of children with psychosomatic disturbances a very close relationship may develop between psychiatry and general pediatrics.

Certain pediatric hospitals have developed day nurseries or schools for the observation and treatment of emotionally disturbed children, particularly those of pre-school age. In some communities this unit is not part of the hospital, but is administered by a community organization and supervised by the staff of the hospital.

The development of psychiatric facilities in a children's hospital provides almost unlimited opportunities for teaching. The pediatrician in training may learn the early detection of behavioural disorders in children and the techniques of dealing with simple behavioural problems that he will encounter in practice. Psychiatrists in training may be given a wide experience in the problems of childhood, and social workers and psychologists may be assigned to such facilities for training and supervision. The psychiatric department can do a great deal to create a general philosophy in the hospital towards the ill child and his parents. The nursing staff and the attending pediatric staff, as well as nurses and pediatricians in training, will learn the needs of the hospitalized child, the recognition of emotional disturbances in hospitalized children and the relationship of these disturbances to the hospitalization. They will also learn the value of an integrated program of child care which utilizes the services of the occupational therapist, the nursery school staff and the medical social worker.

Such units are ideally suited for research. They are usually situated in a hospital which is carrying out investigation of various problems of childhood. The staff has the opportunity to obtain assistance from other departments of the hospital and to foster research projects which will involve various disciplines. These units are particularly capable of carrying out investigation into those aspects of behaviour which are related to organic or structural disturbances in the central nervous system, mental retardation, cerebral palsy, convulsive disorders, and the like, as well as such psychosomatic disorders as diabetes, celiac disease or asthma.

This issue contains an interesting and instructive series of articles which were presented at the Montreal Children's Hospital on the occasion of the tenth anniversary of the founding of the psychiatric department of that hospital. These articles reveal a diverse approach to the problems of child psychiatry, ranging from the formal psychoanalytic concepts of Melanie Klein and Clifford Scott, to the organic concepts of Loretta Bender. In addition to the development of general psychiatric services, special services have been created including a day treatment centre for emotionally disturbed children, an assessment clinic for the *investigation* and evaluation of children with delayed development and a "learning clinic" to study children with specific problems in learning. This department is indeed to be congratulated upon its achievements

of the past ten years and upon the sound base that it has established for future development.

W.A.H.

INTRAVENOUS UREA IN THE TREATMENT OF HEAD INJURIES

ELEVATION of the intracranial pressure after head injury may result from intracranial hematomas, local or general cerebral edema, hypoxia due to an inadequate airway, obstruction of cerebral venous drainage or the combined effects of edema, hemorrhage and necrosis around brain contusion or laceration. In the past the belief that the phase of stupor and confusion after head injury resulted from raised intracranial pressure, led to the practice of treating patients in this state by measures to promote dehydration, and by nursing the patient with the head raised to decrease intracranial venous pressure. There is now general agreement that intracranial pressure is not increased in the majority of cases of head injury. Therefore, unless it is known that elevation of intracranial pressure does exist, dehydration measures can be of no value and they may increase the risk of biochemical disturbances; similarly the risk of inhalation while nursing an unconscious patient with the head elevated outweighs any potential benefit from improvement of venous drainage.

However, *when the intracranial pressure is demonstrably elevated from causes other than an intracranial clot*, attempts to reduce it may be necessary. In less severe cases, controlled dehydration for two or three days by restriction of fluid intake, together with rectal infusions of saturated magnesium sulfate, are advocated by some, although the value of such measures is doubted by many. Tracheotomy alone, by ensuring the maintenance of a free airway and adequate cerebral oxygenation, may of itself be sufficient to restore intracranial pressure to satisfactory levels in some cases. In those with generalized cerebral edema, hypothermia may also lower intracranial pressure in many cases. Although bony decompression is now performed infrequently in such cases, in those for whom this procedure may be desirable, the brain may be so tight as to make operation technically difficult with a risk of causing additional brain damage by opening the dura.

For many years a rapidly acting effective hypertonic agent has been sought to ameliorate the tension and swelling of the intracranial structures. Intravenous hypertonic (50%) sucrose or quadruple-strength plasma have long been used for this purpose, but their effectiveness leaves much to be desired and their administration may be followed by a secondary or rebound increase in intracranial pressure.

Since 1958, the intravenous administration of hypertonic (30%) urea, as recommended by Javid,[1] has been gaining increasing popularity as a useful measure to reduce brain bulk during neurosurgical operations.

The efficacy of hypertonic urea in the management of a pilot series of patients with severe head injuries has recently been reported by Watkins, Stubbs and Lewin[2] of the Radcliffe Infirmary, Oxford. Among 1046 patients with acute head injuries admitted between March 1959 and May 1960, there were 40 deaths, a mortality rate of 4%. During that period 30 of these patients were given urea, either in a single dose in conjunction with an operative procedure or over a period of several days with the objective of controlling intracranial pressure. All were comatose when treatment was begun and *all had elevated intracranial pressure with a tight brain* as seen at operation.

On the basis of their observations on this group of patients, Watkins *et al.* consider that intravenously administered hypertonic urea is of value (1) to effect reduction in brain bulk due to edema in the presence of an acute subdural hematoma, thus permitting more efficient evacuation of the hematoma and at times rendering bony decompression by means of a bone flap unnecessary; (2) to facilitate operative procedures in cases in which cerebral compression is due to the combined effects of a thin layer of subdural clot and edema around an area of contused or pulped brain which renders the dura so tight that opening it would be hazardous; (3) to reduce generalized cerebral edema; (4) for prompt and effective relief of postoperative cerebral edema after decompression operations (in such cases it is important to be sure that the clot has not re-formed); and (5) in the treatment of the so-called temporal lobe syndrome in which patients with bitemporal contusion remain stuporous, but not unconscious, for several days, with extensor plantar responses and transient pupillary inequalities.

Urea is most effective and its effects persist longer when the elevation of intracranial pressure is due to generalized edema or to localized swelling adjacent to an area of contusion and/or laceration than when it is due to a clot, *per se*. The relatively normal portion of the brain is more susceptible to the effect of urea than is softened, contused or lacerated brain, much of which is devitalized and does not possess the capacity to resist the passage of urea from the blood into the brain tissues.

Urea as used for this purpose is highly hypertonic, and extravasation of even small amounts may result in soft tissue sloughing and necrosis. Other complications encountered include venous thrombosis in the injected limb, circulatory collapse particularly in patients with already diminished cardiac reserve, excessive dehydration and, occasionally, electrolyte disturbances. In addition it must be borne in mind that this form of treatment may so reduce cerebral edema, and thereby so improve the patient's condition, that an underlying intracranial clot may be overlooked.